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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,384	06/07/2001	Anja Feldmann	2000-0252-CON	9740

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Samuel H. Dworetsky
AT&T CORP.
P.O. Box 4110
Middletown, NJ 07748-4110

EXAMINER	
SHA'AWAT, MUSSA	
ART UNIT	**PAPER NUMBER**
2128	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/876,384	FELDMANN ET AL.	
	Examiner	Art Unit	
	Mussa A Shaawat	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to Application # 09/876,384, filed on June 07, 2001. Claims 1-34 are presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1-6 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lundy M. Lewis US Patent No. (6,014,697) referred to hereinafter as Lewis.

As per claim 1, Lewis teaches a computer readable medium containing executable program instructions for performing a method on a computer connected to a network comprising the steps of:

Receiving network topology information as an input (see col.1 63-67, & col.2 lines 4-10, NMS receives topology data through communication link);

Receiving network traffic demand information as an input (see col.4 lines 27-31, network monitor extracts network traffic demand information);

Constructing a data model of a packet-switched network from the network topology information and network traffic demand information wherein the data model further comprises data objects for network nodes, network links, and for network traffic

demands (see col. 2 lines 27-34, the network devices are polled for attributes "data model" that define the characteristics and status of each network node which is later used for network modeling using the internet; where the computer live network is the packet switched network); and

Constructing a routing model wherein the data objects for network nodes, network links, and for network traffic demands are utilized to simulate network traffic in the packet-switched network (see col. 2 lines 6-10, 22-27 and 32-35, A network topology including hubs, routes and workstations "nodes" are displayed to the user using a Graphical User Interface "routing model").

As to claim 2, Lewis teaches a computer readable medium of claim 1 wherein the network topology information (see col.1 lines 63-67, & col.2 lines 4-10) is derived from data obtained from an operational packet-switched network (see col.1 63-67, where a live network corresponds to an operational packet-switched network).

As to claim 3, Lewis teaches a computer readable medium of claim 2 wherein the data is extracted from router configuration files (see col.4 lines 15-24).

As to claim 4, Lewis teaches a computer readable medium of claim 2 wherein the data is extracted utilizing end-to-end query mechanisms (see col.3 lines 25-33 where end-to-end query corresponds to sending discovery signals from client to discovery nodes).

As to claim 5, Lewis teaches a computer readable medium of claim 1 wherein the network topology information is derived from a proposed topology design (see col.2

lines 57-67 and col.3 lines 1-12, model generator M and N list from L list nodes where L is the proposed topology).

As to claim 6, Lewis teaches a computer readable medium of claim 1 wherein the network traffic demand information (see col.4 lines 27-31) is derived from data obtained from an operational packet-switched network (see col.1 63-67, where a live network corresponds to an operational packet-switched network).

As to claim 15, Lewis teaches a computer readable medium of claim 1 further comprising the step of providing an interface to the data model that graphically displays the network nodes, network links and network traffic calculated by the routing model (see col.2 lines 53-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis as applied to the rejection of claim 1 above in view of Beigi et al US Patent No. (6,363,056) referred to hereinafter as Beigi.

As to claim 7, Lewis teaches network topology information (see col.1 63-67, & col.2 lines 4-10) and network traffic information (see col.4 lines 27-31). However Lewis does not expressly teach traffic measurements collected at ingress routers.

Beigi teaches traffic measurements collected at ingress routers (see col.3 lines 5-11, and col.3 lines 30-39, where bandwidth measurements correspond at ingress routers corresponds to traffic measurements collected at ingress routers).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of traffic measurements collected at ingress routers would allow users of Lewis's computer readable medium to continuously monitor the network performance which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

As to claim 8, Lewis teaches network topology information (see col.1 63-67, & col.2 lines 4-10) and network traffic information (see col.4 lines 27-31). However Lewis does not expressly teach traffic measurements made between an ingress link and a set of egress links.

Beigi teaches traffic measurements made between an ingress link and a set of egress links (see col.3 lines 5-7).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of traffic measurements made between an ingress link and a set of egress links would allow users of Lewis's computer readable medium to continuously monitor the network performance which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

As to claim 9, Lewis teaches network topology information (see col.1 63-67, & col.2 lines 4-10) and network traffic information (see col.4 lines 27-31). However Lewis does not expressly teach traffic measurements collected by associating one or more destination network addresses with the set of egress links.

Beigi teaches traffic measurements collected by associating one or more destination network addresses with the set of egress links (see col.7 lines 13-21).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of traffic measurements collected by associating one or more destination network addresses with the set of egress links would allow users of Lewis's computer readable medium to continuously monitor the network performance which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

As to claim 10, Lewis teaches a computer readable medium of claim 9 wherein the set of links is identified by extracting reachability information from network forwarding tables (see col.2 lines 33-35 and 56-65, the network devices are polled for updates, the list of the devices and the characteristics are saved in a list F which includes the status of each device "reachability").

As to claim 12, Lewis teaches extracting information from network configuration files (see col.3 60-64, & col.4 lines 6-13, where extracting information from network configuration corresponds connectivity information between models). However Lewis does not teach a set of egress links.

Beigi teaches traffic measurements collected by associating one or more destination network addresses with the set of egress links (see col.7 lines 13-21).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of traffic measurements collected by associating one or more destination network addresses with the set of egress links would allow users of Lewis's computer readable medium to continuously monitor the network performance which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

As to claim 13, Lewis teaches network traffic demand information (see col.4 lines 27-31). However Lewis does not expressly teach network traffic information being derived from estimates of projected network traffic demand.

Beigi teaches network traffic information being derived from estimates of projected network traffic demand (see Abstract lines 14-17, and Figure 9, col.9 lines 40-67).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of network traffic information being derived from estimates of projected network traffic demand would allow users of Lewis's computer readable medium to continuously monitor the network performance, which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

As to claim 14, Lewis teaches a network traffic demand information (see col.4 lines 27-31). However Lewis does not expressly teach network traffic information being derived from customer subscription information.

Beigi teaches network traffic information being derived from customer subscription information (see col.5 lines 26-37, and co.1 lines 18-22).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Beigi and Lewis. Beigi's teaching of network traffic information being derived from customer subscription information would allow users of Lewis's computer readable medium to continuously monitor the network performance which is desirable to determine the level of service provided and/or to determine if there are any problems between two network access points.

4. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Beigi further in view of Hao et al., U.S. Patent No. 6,728,214 (referred to hereafter as Hao).

As to claim 11, Lewis teaches a computer readable medium of claim 9 wherein the set of links is identified by extracting reachability information from network forwarding tables (see col.2 lines 33-35 and 56-65, the network devices are polled for updates, the list of the devices and the characteristics are saved in a list F which includes the status of each device "reachability").

However Lewis and Beigi do not explicitly teach the forwarding table is a BGP table. However Hao teaches a method of testing routing information and network

components on a network where the routing information is saved in a BGP table (see col. 9 lines 41-65).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Lewis by using a BGP table as taught by Hao because doing so would allow the user to specify a preference or preferred route and therefore possibly having a more secure route through a private network.

5. Claims 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Hao.

As to claim 16, Lewis teaches a routing model (see col.2 lines 21-27). However Lewis does not expressly teach OSPF routing protocol.

Hao teaches a model used for testing OSPF protocol (see col. 3 lines 48-57).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Hao and Lewis. Hao's teaching of a model used for testing OSPF protocol would allow less processing on routers because updates in a network topology are sent instantaneously and net periodically.

6. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis as applied to the rejection of claim 1 above in view of Picazo, Jr. et al. US Patent No. (5,737,525) referred to hereinafter as Picazo.

As to claim 17, Lewis teaches a routing model (see col.2 lines 21-27). However Lewis does not expressly teach IS-IS routing protocol.

Picazo teaches a model used for routing an IS-IS protocol (see col.17 lines 45-59).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of Picazo and Lewis. Picazo's teaching of a model used for routing IS-IS protocol would allow fast update of a network topology since the IS-IS router protocol uses the fewest number of routers between the source and the destination.

7. As to claims 18-34, the limitations of claims 18-34 are similar to the limitations of claims 1-17. Therefore they are rejected based on the same rationale, supra.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Benmohamed et al. US Patent No. (6,795,399) Link capacity computation methods and apparatus for designing IP networks with performance guarantees.
- Castanon US Patent No. (6,810,211) preferred WDM packet-switched router architecture and method for generating the same.
- Blumenau et al. US patent No. (6,665,714) method and apparatus for determining an identity of a network device.
- Elderton et al. US Patent No. (6,477,572) Method for displaying a network topology for a task deployment service.
- Mcdonald et al. US Patent No. (5,881,268) comparative performance modeling for distributed object oriented applications.

- Henderson et al. US Patent No. (6,259,679) Network management system.

Communication

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mussa A Shaawat whose telephone number is (571) 272-3785. The examiner can normally be reached on Monday-Friday (8:30am to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R Homere can be reached on (571) 272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mussa Shaawat
Patent Examiner
December 27, 2004

JEAN HOMERE
SUPERVISORY PATENT EXAMINER